CONTENTS

Number 1

Editorial Comment	i	
Ki J. Kang, Ji H. Song and Youn Y. Earmme	1	Fatigue crack growth and closure behaviour through a compressive residual stress field
W. Schütz, H. Klätschke, M. Hück and C. M. Sonsino	15	Standardized load sequence for offshore structures—WASH 1
Keiro Tokaji, Takeshi Ogawa and Tetsuya Aoki	31	Small fatigue crack growth in a low carbon steel under tension–compression and pulsating-tension loading
C. Mattheck and H. Moldenhauer	41	An intelligent CAD-method based on biological growth
Akihiko Ohta and Toshio Mawari	53	Fatigue strength of butt welded Al–Mg aluminium alloy: tests with maximum stress at yield strength
E. A. Patterson	59	A comparative study of methods for estimating bolt fatigue limits
D. J. Nicholls and J. W. Martin	83	Small crack growth in the aluminium–lithium alloys 8090 and 8091
	I	Information on Conferences/Seminars
	IV	Software Survey Section
	VII	New Patents

Number 2

S. J. John and C. E. Turner	95	Geometry independent R-curves in a titanium alloy using a normalised axis for crack growth
W. J. Baxter and D. W. Gorkiewicz	109	Gel electrode imaging of fatigue cracks in magnesium alloys
J. Polák and P. Liškutín	119	Nucleation and short crack growth in fatigued polycrystalline copper

L. P. Pook — 135 Stress intensity factor expressions for regular crack arrays in pressurised cylinders

A. Bakker — 145 Compatible compliance and stress intensity expressions for the standard three-point bend specimen

Kuang-Hsi Wu and Frederick A. Leckie — 155 Static and cyclic loading of notched 304 stainless steel bars at 650°C

K. S. Chan — 171 A fatigue crack growth model for fiber-reinforced metal–matrix composites

I Information on Conferences/Seminars

IV Software Survey Section

IX New Patents

Number 3

A. Brückner-Foit, W. Ehl, D. Munz and B. Trolldenier — 185 The size effect of microstructural implications of the weakest link model

J. A. Ferreira and C. M. Branco — 201 Fatigue analysis and prediction in fillet welded joints in the low thickness range

M. J. Couper, A. E. Neeson and J. R. Griffiths — 213 Casting defects and the fatigue behaviour of an aluminium casting alloy

Li Zhonghua, Han Jiangbuo, Wang Yonglan and Kuang Zhenbang — 229 Low-cycle fatigue investigations and numerical simulations on dual phase steel with different microstructures

Yang Jingjun, Pei Hongxun and Ke Wei — 241 Unstable and stable crack growth: implications for the behaviour of small and long fatigue cracks

Ji-Liang Doong, Jing-Ming Chi and Jiun-Ren Hwang — 253 Effect of electron beam welding on fatigue crack growth rate in AISI 4130 steel

R. A. Ainsworth and P. J. Budden — 263 Crack tip fields under non-steady creep conditions—I. Estimates of the amplitude of the fields

R. A. Ainsworth and P. J. Budden — 277 — Crack tip fields under non-steady creep conditions—II. Estimates of associated crack growth

H. R. Shercliff and N. A. Fleck — 287 — Effect of specimen geometry on fatigue crack growth in plane strain—I. Constant amplitude response

H. R. Shercliff and N. A. Fleck — 297 — Effect of specimen geometry on fatigue crack growth in plane strain—II. Overload response

I — Information on Conferences/Seminars

IV — Software Survey Section

VII — New Patents

Number 4

N. W. M. Bishop and Frank Sherratt — 311 — A theoretical solution for the estimation of "rainflow" ranges from power spectral density data

C. Thaulow and W. Burget — 327 — The emission of Rayleigh waves from brittle fracture initiation, and the possible effect of the reflected waves on crack arrest

W. Zhao and X. R. Wu — 347 — Stress intensity factors for corner cracks at a semi-circular notch under stress gradients

M. M. Megahed — 361 — Prediction of bending fatigue behaviour by the reference stress approach

J. Pokluda and J. Siegl — 375 — Mixed fatigue fracture morphology of ferritic ductile iron

U. S. Fernando, K. J. Miller and M. W. Brown — 387 — Computer aided multiaxial fatigue testing

Y. M. Dong, W. Yang and K. C. Hwang — 399 — A new approach to structural integrity assessment for ductile fracture

Keiro Tokaji, Takeshi Ogawa and Yoshikatsu Kameyama — 411 The effects of stress ratio on the growth behaviour of small fatigue cracks in an aluminum alloy 7075-T6 (with special interest in stage I crack growth)

Tao Ye, He Jiawen and Hu Naisai — 423 Effect of notch stress field and crack closure on short fatigue crack growth

E. R. de los Rios, K. Ando and R. H. Biddulph — 431 Fracture and defect assessment of ceramic composites

I Information on Conferences/Seminars

IV Software Survey Section

Number 5

M. R. Ling and J. Schijve — 443 Fractographic analysis of crack growth and shear lip development under simple variable-amplitude loading

G. P. Solomos and A. C. Lucia — 457 Markov approximation to fatigue crack size distribution

Gérard Degallaix, Christophe Korn and Guy Pluvinage — 473 Lifetime prediction on Cr–Mo–V and 316L steels under thermal and mechanical cycling

C. M. Suh, J. J. Lee and Y. G. Kang — 487 Fatigue microcracks in type 304 stainless steel at elevated temperature

Daqing Zhang and Bela I. Sandor — 497 A thermoelasticity theory for damage in anisotropic materials

Shinji Kumai, Julia E. King and John F. Knott — 511 Short and long fatigue crack growth in a SiC reinforced aluminium alloy

Feng Junyi, Bian Mengxin and Dang Zijou — 525 Thermal fatigue under multiaxial stresses

C. Mattheck — 535 Design and growth rules for biological structures and their application to engineering

I Information on Conferences/Seminars

IV Software Survey Section

Number 6

D. S. Wood and P. Banks	551	The creep/fatigue behaviour of Type 316 steel under reverse bending conditions
M. Panzenböck, R. Ebner, U. Löcker, H. Aigner and H. Pohl	563	Fatigue behaviour of austenitic Cr–Mn–N steels
M. S. Han, R. A. Smith and S. C. Kim	579	The use of compliance to investigate fatigue crack retardation by cover plates
O. Oni and C. Bathias	585	A comparison of near-threshold fatigue crack propagation in two high strength steels
Małgorzata Skorupa	597	Fatigue crack initiation life prediction for welded joints by low cycle fatigue approach
M. J. Couper and J. R. Griffiths	615	Effects of crack closure and mean stress on the threshold stress intensity factor for fatigue of an aluminium casting alloy
F. Guiu and R. N. Stevens	625	The nucleation and growth of short fatigue cracks both at plain surfaces and notches
S. B. Biner	637	Growth of fatigue cracks emanating from notches in SiC particulate aluminum composite
S. Klee	647	A comment by S. Klee on a paper entitled "A uniaxial cyclic plasticity model including transient material behaviour"
	I	Information on Conferences/Seminars
	IV	Software Survey Section